ENERGY POLICY UPDATE

July 15, 2014

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

UPCOMING WEBINARS

- ENERGY STAR Webinars
- U.S. Dept. of Energy Tribal Renewable Energy Webinar Series for 2014
- Better Buildings Challenge: Public-Sector Update
  Thursday, July 24
  12:00 pm - 12:45 pm MST
  Register to attend the webinar.

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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

Arizona Enlists a Beetle in Its Campaign for Water

[New York Times, July 14] Lees Ferry, AZ – In this corner of America known for its vast landscapes, rugged mountains and deep river canyons, signs of the havoc created by the minuscule tamarisk beetle are everywhere. For miles along the banks of the Colorado River, hundreds of once hardy tamarisk trees — also known as salt cedars — are gray and withered. Their parched branches look like victims of fire or drought. But this is not the story of beloved trees being ravaged by an invasive pest — quite the opposite. Farmers, ranchers and the water authorities here are eager to get rid of the tamarisk trees, which are not native to Arizona and which they say suck too much water. They have welcomed the beetles, which have made their way from Colorado and Utah over the last decade, and have watched with delight as the centimeter-long workhorses have damaged the trees by eating their spindly leaves. The hope is that the beetles will now rid Arizona of the trees. "We view the tamarisk as a pest," said Joseph Sigg, the government relations director at the Arizona Farm Bureau. "Water is an expensive input, and to the extent that we can lower it, the beetle can help." But scientists say that nature is rarely a zero - sum game and that removing the deep-rooted tamarisks— which the authorities have tried with bulldozers, chain saws and now beetles — will not produce more water. New tamarisks or other trees will replace the fallen ones, the scientists say, and the birds that live in the tamarisks, like the endangered Southwestern willow flycatcher, will be harmed. Plus, once the beetles are done eating tamarisk leaves, they are likely to feed on other trees. Better to view replacing the tamarisk as a way to increase biodiversity, not save water, they said.

As Arizona Wrestles with Solar's Costs, Industry Slows

With renewable-energy targets largely met, demand for alternatives wanes.

[Arizona Republic, July 14] For years, Arizona has been a leader in solar-power generation. Utilities in the state have been held to an expensive renewable-energy standard, jobs have been added, and solar projects have been installed at a rapid-fire pace. But after a period of explosive growth, the industry that Arizona helped pioneer is slowing as utility regulators grapple with how much of premium energy customers should pay to implement solar and other renewables. The U.S. solar market is expected to grow by one-third this year compared with 2013. But the forecast for Arizona is cloudier. For the first time in several years, no large solar plants are under construction in the state, and the number of rooftop-solar installations is down year over year, particularly for businesses. Arizona has a lower renewable-energy standard than neighboring states. But in the past year, regulators, utility officials, consumers and clean-energy advocates have intensely debated the additional costs associated with alternative energy. Arizona's renewable efforts are solar-heavy because the state does not have as much inexpensive wind or

geothermal energy potential as some of its neighbors. The price for cleaner energy often is higher bills, and the costs can end up falling on people already struggling to make ends meet. Most of the solar and other renewable-energy projects built in Arizona have come about because of the state's renewable-energy standard, requiring utilities to get 15 percent of their energy from solar and other renewables by 2025. That is now the lowest standard in the eight most populous Western states, although Utah's standard is more of a goal than a mandate.

New Soil Moisture Sensor Tracks Drought Conditions in Arizona, Mexico

[ASU News, June 26] Soil moisture measurements are needed to improve our understanding of water availability in rural and urban areas. Adam Schreiner-McGraw, an Arizona State University graduate student studying hydrology, has installed a new type of soil moisture sensor in four different ecosystems in the southwestern U.S. and northwest Mexico. Currently in the second year of measurements, these probes have tracked remarkably well the moderate drought conditions in Arizona and the aid provided by the wetter-than-average conditions during last summer's monsoon. Many parts of the hydrologic cycle are difficult to measure (such as groundwater movement or evapotranspiration), so mathematical models are used to help estimate these fluxes and understand how the hydrologic cycle might be changing. Schreiner-McGraw hopes that the data obtained by these soil moisture sensors can be used to improve watershed hydrology models used commonly for assessing impacts of land cover or climate change. About the size of a person and shaped like a space shuttle, these novel probes are called cosmic-ray soil moisture sensors. They are affiliated with the COSMOS (cosmic-ray soil moisture observing system) project, a National Science Foundation-supported project to measure soil moisture based upon cosmic-ray neutrons. An off-the-shelf device, these solar-powered sensors have remote data capture and can be installed in two days with a single field calibration.

Not Your Typical 'Flat and Black' Freeway

Students in the College of Architecture, Planning and Landscape Architecture are developing recommendations for a proposed interstate that would stretch from Nogales to Las Vegas.

[UA News, July 7] Arizona could see a new interstate in the future. And if recommendations being developed by students at the University of Arizona are successful, the highway won't be anything like the 1950s versions that crisscross the country. Linda Samuels, assistant professor at the UA College of Architecture, Planning and Landscape Architecture and director of UA Sustainable City Project, calls them the "flat and black" model of freeway design – miles of homogeneous asphalt with dotted white lines as far as the eye can see, topped with cars transporting commuters, semi-trucks moving freight and the occasional road tripper. She's working with students to ensure that a new interstate proposed for Arizona would be much more than another standard freeway. The final Interstate 11 route has not been determined, but it is intended to be part of the Canamex international trade corridor – a chain of interstates linking Mexico with Canada. Parts of Interstate 10 and Interstate 19 are already designated segments of the Canamex Corridor. Congress defined the Canamex in the 1995 National Highway Systems Designation Act. The Canamex project is a joint effort involving Arizona, Nevada, Idaho, Utah and Montana to develop a continuous multi-lane freeway from Mexico through the U.S. to Canada, facilitating trade between the countries and minimizing traffic congestion.

Tesla Opens Latest Supercharger Station in Wickenburg

[Phoenix Business Journal, July 15] Tesla Motors Inc. has opened one of its Supercharger stations in Wickenburg. The California-based maker of electric vehicles placed the charging station along U.S. Route 93 to support trips between Phoenix and Las Vegas. Tesla's Supercharger stations allow owners of its vehicles to recharge during long trips. They provide up to 120 kilowatts of power and can replenish half of a Model S battery in 20 minutes. Stations are strategically placed in various spots around the country to allow drivers to go from station to station with minimal stops.

SRP Reports Lower Than Average Water Runoff in 2014

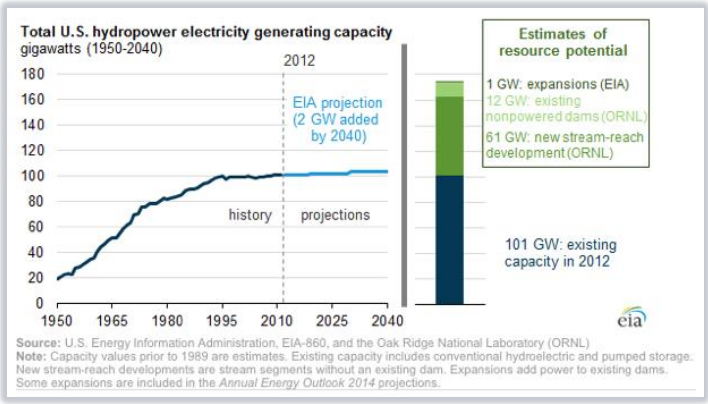
[Phoenix Business Journal, July 14] The 2014 winter runoff season provided little relief for Arizona's reservoirs, marking eighth driest season in 116 years, according to data from the Salt River Project. Despite this, reservoirs are at about 53 percent capacity, which is about the same level as this time last year, said Jeff Lane, an SRP spokesman. "They're doing exactly what they were designed to do: capture runoff form melting snow in wet years and save it for dry years," Lane said. However the end of the dry season might be in sight, or at least indicators predict a respite in the coming months. An El Niño year is expected for the 2015 rainy season, characterized by warmer-than-normal ocean temperatures. Despite water reserves hovering just above the halfway mark, Lane said SRP is not allocating its water any differently. But as the Valley sees its fourth consecutive year with below-median winter inflows, Lane said SRP is continuing to pursue alternative options, such as research into desalinating water from the Sea of Cortez with

the state of Sonora in Mexico.

University of Arizona Researchers Primed To Get Cost-Limiting Temperature-Controller to Market
When the temperature schedule or monthly budget is changed, the new cost-limiting temperature controller provides real-time feedback on how one affects the other, putting homeowners in control of balancing their comfort and budget.
[Tech Launch Arizona, June 20] Researchers at the University of Arizona, with the support of Tech Launch Arizona, are one step closer to giving consumers something they've never had before: a way to easily and instantly make informed decisions about the tradeoff between comfort and the cost of electricity for heating and cooling, which typically accounts for half of a home's electricity bill. Associate professor Jonathan Sprinkle and a team of researchers in the electrical and computer engineering department have developed a monitor that works with a Wi-Fi enabled thermostat to automatically manage temperature settings based on how much consumers choose to spend on electricity, not just on how cool or warm they want to be at any given time. Unlike smart thermostats that expect consumers to reduce energy consumption by choosing set points using their intuition of savings, this technology translates thermostat changes into dollars before the electricity bill lands in the mailbox. "Many people do not understand how much energy and money they could be saving," Sprinkle said. "They just set their thermostat in the desired temperature range then get a bill at the end of the month with no understanding of how they correlate. With this technology, people can decide what they want their comfort levels to be depending on how much they want to spend for electricity." Tech Launch Arizona, a University of Arizona arm that helps faculty members commercialize their inventions, has filed for a patent on behalf of the University and recently executed a contract that licenses the technology to the start-up company, Acomni LLC. Now the company is looking toward securing investors and partnering with utility companies and heating and cooling businesses to get the device into homes.

ALTERNATIVE ENERGY & EFFICIENCY

Hydropower Stymied by Economics, Not Resources
[Energy Manager Today, July 14] A recent study conducted by Oak Ridge National Laboratory (ORNL) for the US Department of Energy, titled "New Stream-reach Development Resource Assessment," found that 61 gigawatts (GW) of hydroelectric power potential exists at waterways without existing dams or diversion facilities. This value excludes Alaska, Hawaii and federally protected lands. ORNL's hydropower resource estimates contrast with the 2 GW of additional hydropower capacity projected to be added through 2040 in the US Energy Information Administration's (EIA) latest *Annual Energy Outlook* (AEO2014) Reference case.



For its study, ORNL evaluated the new stream-reach development (NSD) resource potential of more than 3 million US streams from 2011 through 2013. Using a comprehensive set of recent US geographic, topographic, hydrologic, hydropower, environmental and socio-political datasets, ORNL identified stream-reaches with high energy density and completed a topographical analysis of promising stream-reaches to estimate the characteristics of potential inundations of reservoirs. The NSD assessment focused specifically on undeveloped stream-reaches. The report found that the highest potential hydropower resources are in the Pacific Northwest Region (32 percent), Missouri Region (15 percent) and California Region (9 percent).

Inventor Pushes Solar Panels for Roads, Highways
[Associated Press, July 12] The solar panels that Idaho inventor Scott Brusaw has built aren't meant for rooftops. They are meant for roads, driveways, parking lots, bike trails and, eventually,

highways. Brusaw, an electrical engineer, says the hexagon-shaped panels can withstand the wear and tear that comes from weather and vehicles, big and small, to generate electricity. “We need to rebuild our infrastructure,” said Brusaw, the head of Solar Roadways, based in Sandpoint, Idaho, about 90 miles northeast of Spokane, Washington. His idea contains “something for everyone to like.” “Environmentalists like it,” he said. “Climate change deniers like it because it creates jobs.” While the idea may sound outlandish to some, it has already garnered $850,000 in seed money from the federal government, raised more than $2 million on a crowdfunding website and received celebrity praise. Solar Roadways is part of a larger movement that seeks to integrate renewable energy technology — including wind, geothermal and hydropower — seamlessly into society. The Solar Energy Industries Association, a trade group based in Washington, D.C., described companies like Solar Roadways as “niche markets” in the booming alternative energy industry. “They represent the type of creative innovation that addresses design and energy, while showcasing the diversity of solar applications,” said Tom Kimbis, a vice president of the association. Brusaw said that in addition to producing energy, the solar panels can melt away snow and ice, and display warning messages or traffic lines with LED lights. There are skeptics, who wonder about the durability of the panels, which are covered by knobby, tempered glass, and how they would perform in severe weather or when covered with dirt.

Major U.S. Companies: Unmet Renewable Energy Demand Requires Market Shift

[North American Windpower, July 11]Seeking to increase the availability of cost-competitive renewable energy to run their businesses, 12 companies have **signed** the Renewable Energy Buyers’ Principles to better communicate their purchasing needs and expectations to the marketplace. The companies - Bloomberg, Facebook, General Motors, Hewlett-Packard, Intel, Johnson & Johnson, Mars, Novelis, Procter and Gamble, REI, Sprint, and Walmart - hope the principles will open up new opportunities for collaboration with utilities and energy suppliers to increase their ability to buy renewable energy. With a combined renewable energy target of 8.4 million MWh per year through 2020, the 12 participating companies are seeking a market shift to achieve their sustainable energy goals. Large-scale buyers often have to work around traditional utilities to purchase renewables at competitive prices at the scale they need, increasing complexity and transaction costs.

More Than 5,500 Buildings To Compete in Energy Star Battle of the Buildings

[Sustainable Cities Network, July 14] Washington, D.C. – The U.S. Environmental Protection Agency launched the 2014 Energy Star Battle of the Buildings: Team Challenge. More than 5,500 buildings nationwide are going head-to-head to reduce their energy use. In support of President Obama’s Climate Action Plan, which calls for businesses to cut in half the amount of energy they waste over the next 20 years, the competition specifically targets wasted energy in commercial buildings, and will motivate businesses to improve energy efficiency, reduce harmful carbon pollution, and save money. “The competitive spirit is alive and well among the building teams working to improve their energy efficiency in this year’s Battle of the Buildings,” said EPA Administrator Gina McCarthy. “After four successful years, we’re excited to see the innovative ideas that will emerge from the competitors as they find new ways to save energy and money while reducing greenhouse gas emissions and protecting the environment.” In the only coast-to-coast competition of its kind, dozens of different types of commercial buildings are facing off in this year’s Energy Star Battle of the Buildings. This year’s theme, “Team Challenge,” features teams of five or more buildings who will work together to reduce their collective energy use as much as possible over the course of a year. For example, “Team Staples” includes 17 Staples stores, while 15 Whole Foods stores will support each other as part of “Team Whole Foods Market.” In New Castle County, Del., 13 elementary schools will compete as part of a team, and they’re going up against their county’s five middle schools and six high schools. In Hillsborough County, Fla., fire stations will team up to compete against libraries. This year marks the fifth year that EPA has hosted the Battle of the Buildings. The competition, and positive environmental impacts, have grown exponentially since that time. Altogether, last year’s competitors saved an estimated $20 million on utility bills. Nearly 50 buildings in the competition demonstrated energy use reductions of 20 percent or greater. Commercial buildings in the United States spend more than $100 billion in annual utility bills and are responsible for approximately 20 percent of both the nation’s energy use and greenhouse gas emissions. By improving the energy efficiency of the places they work, play, and learn, the competitors will save energy and reduce harmful greenhouse gas emissions that contribute to climate change.

ENERGY/GENERAL

ISU Helps Develop Electricity Rate Database

[PANTAGRAPH.com, July 14] NORMAL — Electricity rates from nearly 3,500 utilities across the country are now available in a free online database developed by Illinois State University in

conjunction with the National Renewable Energy Laboratory. The U.S. Utility Rate Database allows the public to make general comparisons and for software developers to produce custom applications. The project took three years to complete, involving the entering of nearly 45,000 rates. The website is searchable by ZIP code or utility name, said ISU. The database "will allow consumers to do an accurate cost-benefit analysis of the value of solar panel installations, using the retail cost of electricity," said David Loomis, director of ISU's Center for Renewable Energy. "In the past, consumers had to use national or state averages, which resulted in inaccurate comparisons." The database is accessible at http://en.openei.org/wiki/Utility_Rate_Database.

Natural Gas Boom Hasn't Made US Energy Secure, Warns IEA Chief

[The Hill, July 14] The United States has not reached a state of energy security despite the natural gas boom that is sweeping the nation, the new head of the International Energy Agency (IEA) said Monday. Maria van der Hoeven said the IEA forecasts that U.S. oil supplies will plateau in the next two decades, causing the country to rely more heavily on the Middle East for oil. "There certainly is some good news in oil security for now, but the nature of the business means that it is imperative to look ahead," she said. "And there we see some causes for concern." Speaking at the U.S. Energy Information Administration's annual conference, the new IEA chief cautioned against American policymakers leaning too heavily on the plentiful supply of natural gas as they plan for the future. "You must be careful about the degree to which you rely on gas, because energy security really requires diversity," van der Hoeven said. "You do not want too many of your eggs in the same basket." As an example, she cited this winter's polar vortex, when extreme cold temperatures increased the demand of natural gas for heating. Without a diversity of energy sources, there would have been no gas for electricity. But other sources, such as coal, nuclear and wind, stepped in to help. The Paris-based IEA was founded in 1974 to coordinate international oil reserves amid an energy crisis, back when ensuring oil supplies immediately was a top international priority.

Student-Designed Device Reduces Gas Lawnmower Air Pollution by Over 90 Percent

[GizMag.com, July 8] Gas-powered lawnmowers are notorious polluters. According to the US Environmental Protection Agency, running a new gas mower for one hour produces as much air pollution as would be generated by 11 typical automobiles being driven for the same amount of time. Switching to an electric or reel mower is certainly one option, but for those applications where it's gotta be gasoline, a team of engineering students from the University of California, Riverside are developing another: an attachment that they claim reduces noxious emissions by over 90 percent. Known as UCR NOx-Out, the device takes the form of an L-shaped stainless steel pipe that replaces an existing mower's muffler. It cleans up the exhaust via a three-step process. First, a stainless steel filter removes the bulk of the particulate matter. Next, a fine spray of urea is released into the exhaust stream. Finally, that urea reacts with a copper zeolite catalyst to convert the exhaust's nitrogen oxide and ammonia content into innocuous nitrogen gas and water, which are released into the air. That catalyst also converts the carbon monoxide into carbon dioxide.

Texas and One Other State Now Account for Half of U.S. Oil Production

[San Antonio Business Journal, July 8] Texas and North Dakota together produced nearly half of the United States' April crude oil output, according to new Energy Information Administration data. The two states accounted for 48 percent of the nation's 8.4 million barrels of daily production during the month, according to the EIA, which is the U.S. Department of Energy's statistical arm. Texas produced 3 million of the total and North Dakota — home of the oil-rich Bakken Shale — produced 1 million. The use of hydraulic fracturing — or fracking — has unlocked record oil production from the Eagle Ford Shale, located south of San Antonio and West Texas' Permian Basin. In September, the Lone Star State reached its highest daily oil output since January 1981, according to federal estimates.

INDUSTRIES AND TECHNOLOGIES

Blueprints for Taming the Climate Crisis

[New York Times, July 8] Here's what your future will look like if we are to have a shot at preventing devastating climate change. Within about 15 years every new car sold in the United States will be electric. In fact, by midcentury more than half of the American economy will run on electricity. Up to 60 percent of power might come from nuclear sources. And coal's footprint will shrink drastically, perhaps even disappear from the power supply. This course, created by a team of energy experts, was unveiled on Tuesday in a report for the United Nations that explores the technological paths available for the world's 15 main economies to both maintain reasonable rates of growth and cut their carbon emissions enough by 2050 to prevent climatic havoc. It offers a sobering conclusion. We might be able to pull it off. But it will take an overhaul of the way we use

energy, and a huge investment in the development and deployment of new energy technologies. Significantly, it calls for an entirely different approach to international diplomacy on the issue of how to combat climate change. “This will require a heroic cooperative effort,” said Jeffrey D. Sachs, the Columbia University economist who directs the Sustainable Development Solutions Network at the United Nations, which convened the multinational teams. The teams, one in each of the 15 countries, looked at what would be necessary to keep the atmosphere from warming more than 2 degrees Celsius, 3.6 degrees Fahrenheit, above the preindustrial average of the late 19th century, a target that most of the world committed to at the climate summit meeting in Copenhagen five years ago. To do so, CO_2 emissions from industry and energy use would have to fall to at most 1.6 tons a year for every person on the planet by midcentury. That is less than a tenth of annual American emissions per person today and less than a third of the world average. And we haven’t quite figured out how to get from here to there.

Cyber Threats Put Energy Sector on Red Alert

[The Hill, July 15] Officials working to protect the nation from online threats are casting a wide net as they seek to guard against hackers and foreign governments targeting the United States. Lately the focus has shifted to the power lines and oil pipelines that crisscross the country, providing vital energy sources that could be hijacked for nefarious ends. "Changes in technology with operational devices is really causing the industry to broaden its spectrum of possible threats," said Michael Gomez of KPMG, a tech firm that offers cybersecurity products to the energy industry. "You can get an attack from almost any place now." The control rooms, substations and devices used to manage the nation’s power grid, oil and gas plants, refineries and pipelines are all digital now, putting them at greater risk of cyberattacks. At the same time, attempts to infiltrate the energy sector are growing more frequent. Of the roughly 200 cases of hacking attacks the cybersecurity team at the Department of Homeland Security handled in 2013, more than 40 percent were in the energy sector, an agency report said. "Out of all of the critical infrastructure sectors reporting attacks, the most vulnerable to attacks is the energy sector," Gomez said. "Not any single sector within the energy industry is outside the scope of recent cyberattacks." Rising concern about cyberattacks fueled the Obama administration's move to issue security guidance for critical infrastructure providers. The guidance focused on helping utilities and other energy sector organizations purchase technology to protect against attacks and improve reliability. Lawmakers on Capitol Hill have pushed to establish additional cybersecurity standards through legislation, but have yet to send legislation to President Obama’s desk.

Energy Demands of Networked Devices Skyrocket

As the Internet of things grows to encompass billions of devices, its power usage will require novel technologies for improving efficiency.

[MIT Tech Review, July 14] Networked devices will require more energy than all of Russia by 2025, making efficiency a top priority. Between computers, smartphones, tablets, wearables, and the Internet of things, the number of networked devices around the world is growing rapidly, and all those devices need energy, even if they’re not doing anything. That could be a problem. A new report from the International Energy Agency, an intergovernmental organization dedicated to ensuring reliable and clean energy, says that the electricity demand of networked devices around the world in 2008—420 terawatt-hours—was equal to that of France; in 2013 the demand surpassed that of Canada, reaching 616 terawatt-hours. By 2025, the report projects, networked devices will account for 6 percent of global electricity demand at 1,140 terawatt-hours. As much as 80 percent of that demand will be used just to maintain a network connection, keeping devices ready and waiting.

Utilities To Host Carbon Lab at Wyoming Power Plant

[Associated Press, July 15] Cheyenne, WY – Two electric utilities say they're interested in hosting a proposed lab to test out carbon capture technologies at a working power plant in Wyoming. Gov. Matt Mead said Monday those utilities are Bismarck, North Dakota-based Basin Electric Power Cooperative and Rapid City, South Dakota-based Black Hills Corp. Both utilities operate coal-fired power plants in the Gillette area. Wyoming has reserved $15 million to build a test center a Wyoming coal-fired power plant. Teams would use the lab to compete for a proposed $10 million prize for developing a cost-effective way to trap and reuse carbon dioxide emissions. The U.S. Environmental Protection Agency proposes steep cuts in CO2 emissions in the years ahead. Much of that CO2 comes from coal-fired power and the stakes are high for Wyoming, the top coal-mining state.

LEGISLATION AND REGULATION

Iowa Court Rules in Favor of Selling Solar Power Direct to Customers

[Associated Press, July 14] Iowa City, IA – Solar energy companies can legally sell power directly

to customers, the Iowa Supreme Court ruled Friday in a boost to the small but growing source of renewable energy. The ruling will likely expedite the adoption of rooftop solar power generating systems — particularly by cities, schools and nonprofit groups — that can reduce users' energy costs and their impact on the environment. It also puts Iowa in line with about two dozen other states that allow power purchase agreements, at a time when state leaders are hoping to expand solar energy production. "This is an important milestone for solar energy in Iowa," said Rhone Resch, president of the Solar Energy Industries Association in Washington. "It undoubtedly will help to jump-start solar installations across the state." At issue was whether Eagle Point Solar could enter into an agreement with Dubuque to install solar panels at a city building. Under the arrangement, the city would purchase power generated from its rooftop from Eagle Point, which would own and maintain the panels for a period of time before the city gained ownership.

Study Says States Are Prepared for EPA Carbon Pollution Rules

States are well positioned to implement the U.S. Environmental Protection Agency's (EPA) recently proposed Clean Power Plan, according to a new report from Analysis Group. The report, funded by the Energy Foundation and the Merck Family Fund, was released at the National Association of Regulatory Utility Commissioners' conference in Dallas. Analysis Group says the study is based on a careful analysis of states that already have experience regulating carbon pollution. It finds that those states' economies have seen net increases in economic output and jobs. “Several states have already put a price on carbon dioxide pollution, and their economies are doing fine. The bottom line: the economy can handle - and actually benefit from - these rules,” says Analysis Group Senior Advisor Susan Tierney. “Those states have shown they already have the tools available to cut CO2 emissions while generating macroeconomic benefits and protecting consumers from dramatic hikes in their energy bills.” The EPA's proposed Clean Power Plan would regulate carbon emissions from existing fossil-fueled power plants using the EPA's authority under the Clean Air Act. Due to be finalized next year, the draft rules allow states to choose a variety of market-based and other approaches, such as renewables, to cut the greenhouse gas emissions. The Analysis Group team analyzed the carbon-control rules already in place in several states to see what insights they might hold for the success of the national rule.

W.T.O. Rules against U.S. on Tariffs Placed on Chinese Products

[Reuters, July 15] GENEVA — World Trade Organization judges have said that the United States broke its rules in imposing hefty duties on Chinese steel products, solar panels and a range of other goods that Washington argues enjoyed government subsidies. In a similar case involving American methods in deciding when foreign imports are unfairly priced, another W.T.O. panel ruled Monday in support of some claims by India against tariffs on steel exports from three of its major companies. Trade diplomats said the two cases, both under scrutiny for nearly two years by the separate panels, reflected a widespread concern in the 160-member W.T.O. over what many see as illegal protection by the United States of its own producers.

WESTERN POWER

Coal Plant Carbon Pollution Injects Life in Old Oil Wells

In one of the first projects to harness the C02 waste of a coal plant for oil drilling, power generator NRG Energy Inc. (NRG) announced today that it’s beginning construction on a $1 billion retrofit of its East Texas coal plant. NRG will pump carbon dioxide pollution from the plant deep into a nearby oil field that it partially owns. The idea is to loosen trapped crude deposits, making old wells flow like new while burying the harmful greenhouse gas. Cash from the increased oil production will help pay for the project, NRG said in a statement today. The East Texas plant will be the largest of its kind to supply CO2 for oil exploration from coal-powered utilities. Oil companies have long relied on natural sources of underground carbon to goose output with a technique called carbon flooding. As demand has risen, drillers have snatched up those supplies, causing a shortage of natural carbon and creating a market for recycled CO2 from coal plants. “The way I look at this project, it is really like a bridge between the power and the oil industries,” said Arun Banskota, president of NRG’s carbon-capture business. 336,000 Cars - Construction on the project near Houston is scheduled to begin today. When finished in late 2016, the facility will remove carbon equivalent to the exhaust of 336,000 cars annually and spur a 30-fold increase in crude output from the West Ranch oilfield about 80 miles (129 kilometers) away. NRG’s partner in the project is JX Nippon Oil & Energy Corp., Japan’s largest oil refiner and a unit of JX Holdings Inc. (5020) The two co-own the oilfield with closely-held Hilcorp Energy Co.

Drought Impact Study: California Agriculture Faces Greatest Water Loss Ever Seen

[UC Davis, July 15] A new report from the University of California, Davis, shows that California agriculture is weathering its worst drought in decades due to groundwater reserves, but the

nation's produce basket may come up dry in the future if it continues to treat those reserves like an unlimited savings account. The UC Davis Center for Watershed Sciences study, released today at a press briefing in Washington, D.C., updates estimates on the drought's effects on Central Valley farm production, presents new data on the state's coastal and southern farm areas, and forecasts the drought's economic fallout through 2016. The study found that the drought -- the third most severe on record -- is responsible for the greatest water loss ever seen in California agriculture, with river water for Central Valley farms reduced by roughly one-third. Groundwater pumping is expected to replace most river water losses, with some areas more than doubling their pumping rate over the previous year, the study said. More than 80 percent of this replacement pumping occurs in the San Joaquin Valley and Tulare Basin. The results highlight California agriculture's economic resilience and vulnerabilities

Federal Research Spurs Washington State To Store Energy
[PNNL website, July 8] RICHLAND, WA – Three Washington state utilities have been awarded $14.3 million in matching grants from the state's new Clean Energy Fund to lead energy storage projects with ties to federally funded research at the Department of Energy's Pacific Northwest National Laboratory. Gov. Jay Inslee and the state Department of Commerce announced the grants today at the Mukilteo, Wash., facility of UniEnergy Technologies, which is also known as UET and has licensed PNNL battery technology. Two of the winning utilities will install UET's all-vanadium redox flow batteries as part of their projects. PNNL developed the battery technology with six years of funding from DOE's Office of Electricity Delivery and Energy Reliability.

Keystone? Who Needs It? Railroad Plans Fuel Terminal for Port Arthur
[Houston Business Journal, July 8] With the fight over the Keystone Pipeline still raging in Washington, a Kansas-based rail operator and an oil logistics firm are planning a rail terminal in Port Arthur that could double the number of barrels of oil sands crude flowing to the Gulf Coast from Canada. Kansas City Southern (NYSE: KSU) and Waltham, Massachusetts-based Global Partners LP will build the terminal on land owned by the rail operator 90 miles east of Houston, according to HBJ sister paper Kansas City Business Journal. According to Fuel Fix, the terminal could offload 120,000 barrels of oil per day through the terminal, about the same number of barrels all Gulf Coast refiners unload per day currently. The terminal will also be able to store up to 340,000 barrels of heavy oil.

New California Tax Credit Could Boost State's Chance for Tesla Gigafactory
[Phoenix Business Journal, July 11] California Gov. Jerry Brown has signed legislation giving a $420 million tax credit to Lockheed Martin, but the bill also apparently would benefit electric car maker Tesla Motors, too. The bill is designed to make California competitive in the race to garner Tesla's proposed $5 billion Gigafactory battery plant, according to a report by the Associated Press. California, the home state of Tesla, wants to be considered for the plant along with Texas, New Mexico, Arizona and Nevada. Although mostly benefiting Lockheed Martin, which has a major presence in DFW, the bill has language helping battery manufacturers, according to the report. Tesla hasn't said where it plans to build the plant, but it was learned this week that a site in Dallas is being considered by the auto maker.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

INCENTIVES

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- Job Training
- Quality Jobs
- Qualified Facility
- Computer Data Center Program
- Research & Development
- Foreign Trade Zone

- Military Reuse Zone
- Angel Investment
- Renewable Energy Tax Incentive
- Healthy Forest
- Sales Tax Exemption for Machinery and Equipment
- Lease Excise
- Additional Depreciation
- Work Opportunity
- Commercial/Industrial Solar
- SBIR/STTR
- Private Activity Bonds
- QECB's

(ACA) PROGRAMS

DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News
  DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- Promoting Consensus on Fossil Energy Technologies - Response due July 23, 2014
- Grid-Scale Electricity Storage - Response due August 4, 2014
- Tribal Energy and Mineral Development Grants - Response due August 22, 2014
- Hydrogen Fuel Cell Technologies Incubator - Response due September 3, 2014
- Manufacturing Machines and Equipment - Response due September 15, 2014
- Secure and Trustworthy Cyberspace - Response due September 19, 2014
- Nanomanufacturing - Response due October 1, 2014
- Civil Infrastructure Systems - Response due October 1, 2014
- Energy for Sustainability - Response due October 30 ,2014
- Sunshot "Race to the Roof" Initiative - Registration due October 31, 2014
- Energy, Power, and Adaptive Systems - Close Date: November 3, 2014
- National Robotics Initiative - Response due November 14, 2014
- NSF/DOE Partnership on Advanced Frontiers in Renewable Hydrogen Fuel Production Via Solar Water Splitting Technologies 2014-2016 - Close Date: Dec. 11, 2014
- Energy for Sustainability - Response Due: February 19, 2015
- Solar Market Pathways - Response due July 3, 2015
- Advanced Fossil Energy Projects - Solicitation Number: DE-SOL-0006303 Expiration Date: November 30, 2016
- Energy Department Announces Next Phase of L Prize Competition to Create Innovative Energy-Saving Lighting Products – Notification of Intent to Submit Product minimum of 30 days, but no more than 45 days prior to product submission. Monetary prize goes to the first successful entrant with the earliest timestamp.
- Repowering Assistance Program - Ongoing
- Rural Business Enterprise Grants - Ongoing
- Rural Business Opportunity Grants - Ongoing
- Sustainable Agriculture Research and Education Grants - Ongoing

- Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines
- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- Green Refinance Plus - Ongoing

ENERGY-RELATED EVENTS

2014

- Renewable Energy Development on Federal Lands 2014
  July 16-17, 2014 Denver, CO

- HydroVision International
  July 22-25, 2014 Nashville, TN

- Biomass 2014: Growing The Future Bioeconomy
  July 29-30, 2014 Washington, DC

- DOE Commercial-Scale Tribal Renewable Energy Project Dev. & Finance Workshop
  July 29-31, 2014 Golden, CO

- National Geothermal Summit
  August 5-6, 2014 Reno, NV

- Microgrid Development for Public & Private Sectors
  August 12-14, 2014 San Diego, CA

- Energy 101
  August 13 Litchfield Park, AZ

- Innovation Arizona Summit
  August 14 Scottsdale, AZ

- 2014 Environmental & Sustainability Summit
  August 14, Prescott, AZ

- SBIR: Ask the Experts
  August 20 Tucson, AZ

- SBIR: Ask the Experts
  August 21 Phoenix, AZ

- 2014 ACEEE Summer Study on Energy Efficiency in Buildings
  August 17-22, 2014 Pacific Grove, CA

- 2014 Farm Progress Show
  August 26-28, 2014 Boone, IA

- Symposium on Thermal & Catalytic Sciences for Biofuels & Biobased Products
  September 2-5, 2014 Denver, CO

- EPI's 4th Annual Energy Policy Research Conference
  September 4-5, 2014 San Francisco, CA

- Arizona Technology Summit
  Sept. 17 Phoenix, AZ

- HTUF 2014 National Meeting - The Forum for Action in High-Efficiency Commercial Vehicles
  September 22-24, 2014 Argonne, National Lab - Argonne, IL

- Geothermal Energy Expo
  September 28-October 1, 2014 Portland, OR

- AWEA Offshore Windpower Conference & Exhibition 2014
  October 7-8, 2014 Atlantic City, NJ
- Solar Power International
  October 20-23, 2014 Las Vegas, NV
- GreenBuild International Conference & Expo
  October 22-24, 2014 New Orleans, LA
- World Bio Markets USA
  October 27-29, 2014 San Diego, CA
- VERGE SF 2014
  October 27-30, 2014 San Francisco, CA
- Governor's Celebration of Innovation
  November 13, 2014 Phoenix, AZ
- Solar Power Generation USA 2015
  February 4-5, 2015 San Diego, CA
- ASU Sustainability Series Events
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ